

Listing of Claims:

Claim 1 (currently amended) A method of determining hydraulic conductivity of material surrounding a conduit or borehole, comprising the steps of:

- sealably fastening ~~an~~ a first end of a flexible liner to a proximate end of the borehole;
- passing the liner along the borehole while allowing the liner to evert at an eversion point moving through the borehole;
- measuring the eversion point's velocity; and
- calculating the conductivity of the surrounding material from the velocity of the eversion point.

Claim 2 (original) The method of claim 1 wherein the step of passing the liner comprises driving the liner down the borehole.

Claim 3 (original) The method of claim 2 wherein driving the liner comprises pressurizing the liner with a fluid.

Claim 4 (original) The method of claim 2 further comprising the step of monitoring the level of the fluid in the liner.

Claim 5 (original) The method of claim 4 wherein the step of monitoring the fluid level comprises monitoring a pressure meter in the fluid within the liner.

Claim 6 (original) The method of claim 3 comprising the further steps of monitoring the pressure within the liner and monitoring liner tension to determine a driving pressure.

Claim 7 (currently amended) The method of claim 3 comprising the further step of measuring fluid pressure in the ~~hole~~ borehole below the everting end of the liner.

Claim 8 (currently amended) The method of claim 1 wherein the step of passing the liner comprises withdrawing the liner upward in the borehole so that the liner ascends the borehole.

Claim 9 (currently amended) The method of claim ~~7~~ 8 comprising the further step of monitoring a tension due to the resistance of the ascending liner.

Claim 10 (currently amended) The method of claim ~~7~~ 9 comprising the further step of measuring fluid pressure in the ~~hole~~ borehole below the everting end of the liner.

Claim 11 (currently amended) The method of claim 8 further comprising the step of measuring the flow rate of fluid produced ~~from the top~~ at the first end of the liner.

Claim 12 (currently amended) The method of claim 11 comprising the further step of calculating, from the monitored tension and the flow rate of fluid produced, ~~the~~ a gross fluid flow rate inward into the borehole from the surrounding material from ~~the~~ a segment of the ~~hole~~ borehole at the everting end of the liner.

Claim 13 (currently amended) The method of claim 2 wherein the step of calculating conductivity comprises determining a gross fluid flow rate outward into the surrounding material from ~~the~~ a segment of the ~~hole~~ borehole at the everting end of the liner.

Claim 14 (currently amended) The method of claim 13 comprising the further step of monitoring for changes in velocity of the eversion point, wherein when the liner covers a flow path in a the surrounding material, the gross fluid flow rate is reduced by the amount of flow in the flow path, concurrently causing a change in the eversion point's velocity.

Claim 15 (original) The method of claim 14 comprising the further step of plotting the eversion point's velocity versus borehole depth to locate changes in conductivity associated with changes in eversion point velocity.

Claim 16 (original) The method of claim 1 comprising the further steps of installing a secondary tube alongside the liner in the borehole, and supplying fluid via the secondary tube to the borehole.

Claim 17 (currently amended) A method of determining physical characteristics of materials surrounding a subsurface borehole, the borehole having at least some ambient water standing therein, comprising the steps of:

sealably fastening an end of a flexible liner to a proximate end of the borehole;
driving the liner down the borehole while allowing the liner to evert at an eversion point descending the borehole;
continuously measuring the eversion point's descent velocity;
determining a gross flow rate of the ambient water outward into the surrounding material from a segment of the ~~hole~~ borehole adjacent the eversion point of the liner; and
calculating from the gross flow rate a characteristic of the surrounding material.

Claim 18 (original) The method of claim 17 wherein driving the liner comprises pressurizing the liner with a fluid.

Claim 19 (original) The method of claim 18 comprising the further step of continuously monitoring the pressure in the fluid within the liner.

Claim 20 (original) The method of claim 18 comprising the further step of calculating conductivity from the gross flow rate outward into the surrounding material.

Claim 21 (currently amended) The method of claim 20 comprising the further step of monitoring for changes in velocity of the eversion point, wherein when the liner covers a flow path in a the surrounding material, the gross fluid flow rate is reduced by the amount of flow in the flow path, concurrently causing a change in the eversion point's velocity.

Claim 22 (original) The method of claim 21 comprising the further step of plotting the version point's velocity versus borehole depth to locate changes in conductivity associated with changes in eversion point velocity.

Claim 23 (original) The method of claim 1 comprising the further steps of:
installing a secondary tube alongside the liner in the borehole;
pulling the liner from the borehole;
and supplying fluid via the secondary tube to the borehole below the everting end of the liner.